

leveling the surface of the semiconductor film by heating in an atmosphere after removing said oxide film, a concentration of oxygen or a oxygen compound contained in said atmosphere is 10 ppm or less.

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20. (New) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising silicon over a substrate;
irradiating said semiconductor film with laser light in an atmosphere containing oxygen for crystallizing said semiconductor film;
treating a surface of the semiconductor film with a hydrofluoric acid after the irradiation of the laser light; and

leveling the surface of the semiconductor film by heating after the treatment with said hydrofluoric acid in an atmosphere, a concentration of oxygen or a oxygen compound contained in said atmosphere is 10 ppm or less.

21. (New) A method of manufacturing a semiconductor device according to any one of claim 19, wherein the step of leveling the surface of said semiconductor film is conducted by furnace annealing.

22. (New) A method of manufacturing a semiconductor device according to any one of claim 20, wherein the step of leveling the surface of said semiconductor film is conducted by furnace annealing.

23. (New) A method of manufacturing a semiconductor device according to any one of claim 19, wherein the step of leveling the surface of said semiconductor film is conducted between 900 and 1200° C.

24. (New) A method of manufacturing a semiconductor device according to any one of claim 20, wherein the step of leveling the surface of said semiconductor film is conducted between 900 and 1200° C.

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25. (New) A method of manufacturing a semiconductor device according to any one of claim 19, wherein said atmosphere in said leveling step contains an inert gas.

26. (New) A method of manufacturing a semiconductor device according to any one of claim 20, wherein said atmosphere in said leveling step contains an inert gas.

27. (New) A method of manufacturing a semiconductor device according to any one of claim 19, wherein said atmosphere in said leveling step contains a reducing atmosphere.

28. (New) A method of manufacturing a semiconductor device according to any one of claim 20, wherein said atmosphere in said leveling step contains a reducing atmosphere.

29. (New) A method of manufacturing a semiconductor device according to any one of claim 19, further comprising a step of treating a surface of the semiconductor film with a buffered hydrofluoric acid before the irradiation of the laser light.

30. (New) A method of manufacturing a semiconductor device according to any one of claim 20, further comprising a step of treating a surface of the semiconductor film with a buffered hydrofluoric acid before the irradiation of the laser light.

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31. (New) A method of manufacturing a semiconductor device according to any one of claim 19, wherein said semiconductor device is one selected from the group consisting of a personal computer, a video camera, a goggle-type display, a digital camera, and a projector.

32. (New) A method of manufacturing a semiconductor device according to any one of claim 20, wherein said semiconductor device is one selected from the group consisting of a personal computer, a video camera, a goggle-type display, a digital camera, and a projector.